REMARKS

In accordance with the Examiner's request, the Abstract has been corrected (so as to be in the form of a single paragraph and to correct a typographical error). Also, a more descriptive Title of the Invention is presented for the Examiner's consideration. Furthermore, claims 1 and 2 have been amended so as to refer back to previously introduced structural elements using the article "said". Applicants prefer the article "said" to the article "the" so as to be consistent with other portions in the claims. No difference in meaning should be construed, and no difference in meaning is intended.

Withdrawal of the foregoing objections is respectfully requested.

Claims 1-11 were rejected under 35 U.S.C. § 112, second paragraph. The Examiner considered the expression "having a front end side blocked" to be confusing, because it is unclear whether a "sidewall" of the metal tube or a "front end" thereof is blocked.

In response, the claims have been amended to more clearly recite that the metal tube has a "rear end" portion and a "front end" portion, so as to not to confuse with the sidewall of the metal tube. Also, claim 1 has been amended to more clearly recite that the front end portion of the metal tube includes a sidewall and a closed bottom, and that an electrically insulating member is filled at least in between a front end of the thermal sensing portion and an inner wall of the closed bottom of the metal tube as shown, for example, in Fig. 2 (where cement 10 is filled in between a front end of the thermistor body 21 and an inner wall of the closed bottom of the metal tube).

It is respectfully submitted that the claims as amended fully comply with 35 U.S.C. § 112, and withdrawal of the foregoing rejection is respectfully requested.

Claims 1-11 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,639,505 to Murata et al. The Examiner considered Murata et al. as meeting the terms of the rejected claims, including insulating (glass) member 5 provided in between a front end of the thermal sensing portion 3 and a front end of an inner wall of the metal tube 2 (claim 1); and further including an insulator 8 (adiabatic member) provided between a rear end of the electrically insulating member 5 and a front end of the sheath pipe 6b (claim 10). As to claim 2, the Examiner considered that the "front end of an inner wall of said metal tube" as defined by the longest distance H can be any part (including a sidewall) of tube 2a of Fig. 2 of Murata et al. (and is accordingly met by Murata et al. where H in Fig. 3 is not larger than 0.3 mm - see col. 6, lines 36-41).

The Examiner cited holder member 7 of Murata et al. as meeting the electrically insulating member containing alumina as a main component.

As to claim 7, the Examiner cited insulating member 5, 7 as being filled in at least in a hole of a space ranging from a front end of the metal tube to a rear end of the thermal sensing portion.

The Examiner considered that claim 8 is also met, because electrically insulating member 5 of Murata et al. extends to the inner diameter (sidewall) of tube 2a (the Examiner indicates tube 21, but Applicants understand the Examiner to mean tube 2a).

Applicants traverse, and respectfully request the Examiner to reconsider in view of the Amendment to the claims and the following remarks.

The Examiner broadly construes claim 1 as originally filed as requiring an electrically insulating member filled in between a front end of the thermal sensing portion and an inner wall of any part (including a sidewall) of the front end portion of the metal tube. Given that interpretation, insulating glass member 5 of Murata et al. extends between sensing element 3 and an inner sidewall of the front end portion.

To more clearly define over Murata et al., the claims have been amended to recite that the metal tube has a front end portion including a sidewall and a closed bottom, and that the electrically insulating member is filled at least in between a front end of the thermal sensing portion and an inner wall of the closed bottom of the metal tube. In this manner, as discussed bridging pages 2-3 of the specification, the present invention provides a temperature sensor which can achieve a higher response characteristic as compared to conventional temperature sensors, as disclosed by Murata et al., where a side surface of the inner wall of the metal tube and a side surface of the thermistor element are in contact with each other through a glass layer. As shown in Fig. 2 of Murata et al., insulating (glass) member 5 is not filled in between a front end of the thermistor element 3 and the closed bottom of tube 2a.

Although Fig. 5 of Murata et al. shows a distance H between the element and a sidewall of the enclosure, Murata et al does not disclose the subject matter of amended claim 2 where distance H defined between the front end of the thermal sensing portion and an inner wall of the closed bottom of the metal tube is not larger than 2.0 mm.

With regard to present claim 6, although holder member 7 in Fig. 2 of Murata et al. is made of alumina, this is different from the claimed electrically insulating member filled at least in between a front end of the thermal sensing portion and an inner wall of the closed bottom of the metal tube. Murata et al. discloses that the corresponding insulating member 5 may be made of glass, but is silent with respect to the insulating member 5 containing alumina as a main component as required by present claim 6.

Claim 7 has been amended to recite that the electrically insulating member is filled at least in a hole of a space ranging from the closed bottom of the metal tube to a rear end of the thermal sensing portion, to thereby distinguish over Fig. 2 of Murata et al. where a space is present between the front end of insulating member 5 and the closed bottom of tube 2a. The amendment to claim 7, makes clear that the front end is the closed bottom of the metal tube as opposed to a sidewall at a front end portion of the metal tube.

As defined in claim 8, the electrically insulating member is filled at least in a whole of the small diameter portion, the small-diameter portion 33 housing thermistor body 21. Insulating (glass) member 5 of Murata et al. does not fill a whole of corresponding small diameter portion 2a as required by present claim 8.

Murata et al.'s Fig. 2 shows electrode wires 4 being partially housed within small-diameter portion 2a and partially housed within large-diameter portion 2b, and therefore does not meet present claim 11 which requires all regions of the pair of electrode wires to be disposed in large-diameter portion 34, 36 (see Fig. 2 of the present specification). As described at page 17, lines 5-7 of the specification, the rear end portion 36 and the middle-diameter portion 34 of the

first cylindrical portion 31 and the second cylindrical portion 32 constitute the large-diameter portion. As claimed in claim 1 from which claim 11 depends, the large-diameter portion is any portion located on a rear end portion and having a diameter larger than an outer diameter of the small-diameter portion. Claim 11 is not met by Murata et al.

New claim 12 presented for examination recites that the front end of the thermal sensing portion is in contact with the inner wall of the closed bottom of the metal tube through the electrically insulating member. This limitation is also not met by Murata et al.

For the above reasons is it respectfully submitted that the amended claims define novel subject matter, and withdrawal of the foregoing rejection of claims 1-11 under 35 U.S.C. § 102(e) as being anticipated by Murata et al is respectfully requested.

Withdrawal of all rejections and allowance of claims 1-12 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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